

REMARKS

Claims 1-3, 5-9, 11 and 13-23 were pending in the present application, with claims 13, 16-18 and 21 being withdrawn. Claims 1, 16, and 19 are independent claims. Claims 1, 6-8, 11, 14, 19, 20, and 22 have been amended herein. Claims 2-5, 9-10, 12, 15, and 23 have been cancelled. New claims 24-29 have been added. No new matter is added by these amendments.

Since 3 independent claims and 20 total claims remain in the application, no additional claims fees are due.

35 U.S.C. 112 Rejections

Claims 14, 22, and 23 have been rejected under 35 U.S.C. 112, first paragraph. The Office Action indicated that the specification did not mention or make obvious a Hall Effect sensor or a magnet operationally coupled to the magnetic switch. Claim 23 has been cancelled.

See the discussion below regarding Hall Effect Sensors. While use of a Hall Effect sensor has not, to Applicant's knowledge, been used previously with a waterproof personal communication device as in the present invention, once the concept of using a magnetic switch to control such a communication device is stated, those skilled in the art would readily appreciate that a Hall Effect sensor could be adapted and applied for such a purpose. Therefore, to that extent, use of a Hall Effect sensor as a magnetic switch within the context of the claimed invention would be obvious to one of ordinary skill in the art in hindsight, given the benefit of the teachings of the present application.

Furthermore, the present application explicitly recites a "reed switch" and page 10 of the Office Action says "It is well known in the art that Hall Effect sensors and reed switches are equivalent magnetic switches;" the Office Action goes on to say that it would be obvious to make the "simple substitution" of a Hall Effect sensor for a reed switch. If true, then one skilled in the art would understand that magnetic switches, e.g., a reed switch, would also include a Hall Effect sensor.

With respect to the specification's teaching of "a magnet operationally coupled to the magnetic switch." Applicant believes this inherent in the physics of a magnetic switch – a magnet is used to change the state of a magnetic switch. The magnet does so through its magnetic field. That is, the magnetic is "operationally coupled" to the magnetic switch through

the magnetic field of the magnet. The phrase “operationally coupled” simply refers to the magnet’s ability to control the switch through its magnetic field – as is inherent with a magnetic switch and magnet. Please note for example, the discussion in the present published application in paragraph 0037 which describes this:

The electronic controls are operated remotely via an external device. The external device may use infra-red signals, radio frequency signals or magnetic field means to operate the controls of the device. In one embodiment, the controls are operated via a magnetic switch. That is, a small earth magnet is used to toggle the controls of the device. The switch is toggled by passing the magnet over a zone of the device where the appropriate switch or control is located. Such a switch is generally termed a “reed switch” in the art.

Reconsideration and withdrawal of the rejections to claim 14, 22, and 23 is requested.

Claims 14 and 22 have been rejected under 35 U.S.C. 112, second paragraph as being indefinite. The Office Action indicated that it was unclear what a Hall Effect sensor was and what its structural limitations were.

Hall Effect sensors are by no means new technology, and their operation is well understood. For example, Wikipedia states (http://en.wikipedia.org/wiki/Hall_effect_sensor):

A Hall effect sensor is a transducer that varies its output voltage in response to changes in magnetic field. Hall sensors are used for proximity switching, positioning, speed detection, and current sensing applications.

Furthermore, the present application explicitly recites a “reed switch” and page 10 of the Office Action says “It is well known in the art that Hall Effect sensors and reed switches are equivalent magnetic switches;” the Office Action goes on to say that it would be obvious to make the “simple substitution” of a Hall Effect sensor for a reed switch. If true, then one skilled in the art would understand that magnetic switches, e.g., a reed switch, would also include a Hall Effect sensor.

Given the disclosure of the present application, one skilled in the art would understand that a Hall Effect sensor could be used as a typical type of magnetic switch that operates in accordance with those principles. Since the operation of Hall Effect sensors is well known in a

magnetic switch context, Applicant believes that it is not necessary to explicitly disclose its structure and operation in the present application.

Reconsideration and removal of the rejections of claims 14 and 22 under 35 U.S.C. 112, second paragraph, is respectfully requested.

35 U.S.C. 103 Rejections

Claims 1-3, 7, 9, 11 and 15 were rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat. 6,876,845 to Tabata et al. in view of US Pat. 5,317,643 to Patricelli.

Tabata appears to disclose a radio-enabled helmet for use when operating a vehicle. Patricelli disclosed a welding helmet with a radio and with built-in speakers. In Tabata, the radio is a 2-way radio used for person to person communication. In Patricelli the radio is a 1-way entertainment radio (e.g., AM/FM radio). In Tabata, the helmets communicate via an intermediary repeater in the vehicle (1 repeater if the helmets are in the same vehicle, 2 repeaters if the helmets are in different vehicles). In Patricelli, the radio signals are received from radio towers transmitting, for example, an FM radio signal. In Tabata, the controls are user operated buttons located in the back of the helmet. In Patricelli, the volume and channel selector dials are user operated, but are located in the front of the helmet. In Tabata, the controls are to turn the unit on and adjust the volume. In Patricelli, a dial channel selector is used to choose a radio station. In Tabata, the helmet is configured to be used in motion, so is balanced and provides all around head protection. In Patricelli, a welder is substantially stationary, and a welder helmet is really a visor that offers no protection to the back of the head; balancing is not apparently a consideration, as the receiver is located to a side of a helmet band.

In short, the helmets of Tabata and Patricelli are vastly different. They have different structures and functions. Applicant requests reconsideration of this combination, as they appear to be non-analogous.

Patricelli is used for its channel selector. But there is no apparent need for channel selector in Tabata – particularly where the channel selector is used to select a radio station as in Patricelli. There is no motivation to add a channel selector to Tabata. Adapting the helmet of Tabata with the radio station selector dial of Patricelli would achieve no useful purpose – because Tabata has no apparent need for a radio station selector dial. To make the combination

would require significant redesign of Tabata, and such redesign would be made more complex by Tabata's efforts of weight balancing.

With particular regard to claim 1, which has been amended for clarification, even if combined, Tabata and Patricelli do not make obvious the sports and training helmet of claim 1. Neither Tabata nor Patricelli discloses "a waterproof housing" as claimed – particularly one that is resin filled to provide a waterproof enclosure for a battery, electronic control device and a radio signal receiver. In fact, neither Tabata nor Patricelli appear to be concerned with waterproofing. Waterproofing is of importance in the present invention, as explicitly disclosed in the present application.

The Office Action discusses Tabata as "being waterproof to a certain degree" – but there Tabata does not teach waterproofing. And waterproofing to a degree would not truly be waterproofing, nor would that be good enough for the claimed invention. For clarification, the applicant has provided that the housing is resin filled to encase the electronics. Others have not encased (and waterproofed) electronics as claimed, i.e., by pouring resin around then such that when the resin cures the electronics are encased in a waterproof enclosure.

Neither Tabata nor Patricelli discloses "at least one externally rechargeable battery." Use of such a battery in the claimed invention allows for the battery to be encased within the resin filled waterproof housing. Since the battery does not need to be removed from the waterproof unit to be recharged, there is no chance of compromising the waterproof aspects of the waterproof unit when recharging the battery. This means the claimed system has better waterproofing and is less likely to fail.

Amended claim 1 clarifies that "the electronic control device comprises at least one magnetic switch that is toggled via a magnetic field from a magnet passed over a zone of the self-contained waterproof unit containing the magnetic switch." Neither Tabata nor Patricelli discloses a magnetic switch. Controls in Tabata and Patricelli are hand operated and not encased in a waterproof unit. Having such a switch allows for a smooth exterior without exposed or protruding dials, knobs or switches that could be damaged over time.

Amended claim 1 also clarifies that "the radio signal receiver is configured to communicate directly with a hand-held communication device." Tabata communicates indirectly through one or more repeaters and the welding helmet of Patricelli only receives radio

signals, it does not communicate with any other system. Furthermore, neither Tabata nor Patricelli disclose communicating directly with a hand-held device.

For several reasons, Tabata and Patricelli, whether alone or in combination, do not teach the sports and training helmet of claim 1. And while individual components of claim 1 may be found in various references, the combination is unique and not obvious in view of what was known at the time of the invention. Reconsideration and withdrawal of the rejection is requested.

Claims 2-3, 7, 9, 11 and 15 each depends from claim 1, and are patentable over Tabata and Patricelli for at least the same reasons.

Claims 2-3, 9 and 15 have been cancelled, so those rejections are now moot.

Claims 5, 6, 14, 19, 20, 22, and 23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata, Patricelli, in view of Whiting. Claims 5, 6 and 9 each depend from independent claim 1, and are patentable for at least reasons similar to those described above with respect thereto.

Claims 5 and 23 have been cancelled, so those rejections are now moot.

Claims 6 and 14 each depends from claim 1, and are patentable over Tabata, Patricelli, and Whiting for at least the same reasons.

Claim 19 is an independent claim that has been amended in a manner similar to claim 1, and is believed to be patentable over the cited references for at least the same reasons as discussed above. Whiting does not overcome any of the shortcomings of Tabata and Patricelli.

The amendments to claim 19 include that magnetic switch features and encasing the electronics in a non-porous, shock absorbing material. The amendment also clarifies that "the radio signal receiver is configured to communicate directly with a hand-held communication device, as discussed above. Note that like Tabata, Whiting communicates through the vehicle.

Reconsideration and withdrawal of the rejection is requested.

Claims 20 and 22 each depends from claim 19, and are patentable over Tabata, Patricelli, and Whiting for at least the same reasons.

New Claims

New claims 24-26 depend from independent claim 1 and new claims 27-29 depend from independent claim 19.

Therefore, for at least the same reasons as put forth above, claims 24-29 should be patentable over the cited references.

With particular regard to claim 24, the cited references do not disclose that the externally rechargeable power source is a battery configured for "induction charging." Use of such eliminates the need to provide ports or terminals for recharging the battery.


Closing Remarks

It is submitted that all claims are in condition for allowance, and such allowance is respectfully requested. If prosecution of the application can be expedited by a telephone conference, the Examiner is invited to call the undersigned at the number given below.

In connection with this matter, please charge any otherwise unpaid fees which may be due, or credit any overpayment, to Deposit Account Number 501798.

Respectfully submitted,

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